MDOT
Michigan Department of Transportation

ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
MAY 4, 2006 – 9:00 A.M.
MULTI-MODAL CONFERENCE ROOM

Present:	B. O'Brien	J. Reincke	M. VanPortFleet
	J. D. Culp	M. Chaput	C. Roberts
	T. Fudaly	C. Bleech	E. Burns
Absent:	L. Tibbits	J. Friend	J. Polasek
Guests:	G. Mayes	D. Spencley	B. Zimmerman
	M. Dionise	C. Libiran	

OLD BUSINESS

1. **Approval of the Minutes of the March 2, 2006, Meeting –**

   The March 2, 2006, meeting minutes are approved.

NEW BUSINESS

1. **Fortress – Full Depth Reclamation – C. Bleech**

   The Superior Region will use a new process for the rehabilitation of existing HMA pavements during the 2006 construction season. The process, known as Full Depth Reclamation (Fortress), is similar to the traditional base "crush and shape" method, except asphalt cement is added to the crushed base during the milling process. The Minnesota DOT has successfully used the Fortress process and found a significant delay with the reflective cracking process.

   The project, on US-41, will be constructed using both the Fortress method and the traditional base crush and shape method. The Pavement Committee developed and approved a work plan to analyze the proposed project. They will monitor the project for improvements to the service life and long term performance of the section using the Fortress process.

2. **Adoption of the 2004 (Fifth Edition) AASHTO *A Policy on Geometric Design of Highways and Streets* – C. Libiran**

   FHWA has determined that the 2004 AASHTO *A Policy on Geometric Design of Highways and Streets* is in substantial conformance with the previously adopted 2001 edition. Therefore, they are allowing states to use either edition as the basis for development of state standards; Michigan has continued to use the 2001 edition.

Differences between the 2001 and the 2004 editions are minor. They include a slight difference in superelevation and side friction tabular values. When designing with the 2004 edition, it results in inconsistencies between MDOT standards and design values used. While the differences are considered insignificant, it creates problems with design plan reviews and the enforcement of current MDOT standards.

It is recommended that MDOT adopt the new friction values and that we retain the current method used to tabulate superelevation. It is further recommended that the department adopt the 2004 (Fifth Edition) AASHTO *A Policy on Geometric Design of Highways and Streets*.

ACTION: The recommendation to adopt the new friction values and retain the current method for tabulating superelevation is approved. The adoption of the 2004 (Fifth Edition) AASHTO *A Policy on Geometric Design of Highways and Streets* is approved effective August 1, 2006.

3. **Pavement Selection: I-75 Rehabilitation, CS 16091, JN 59468 – B. Krom**

The reconstruction alternates considered were an HMA pavement with rubblized concrete (Alternate 1 – equivalent uniform annual cost [EUAC] $33,158/directional mile) and an unbonded jointed plain concrete pavement overlay (Alternate 2 – EUAC $41,484/directional mile). A life cycle cost analysis was performed and Alternate 1 was approved based on having the lowest EUAC. The pavement design and cost analysis are as follows:

1.5”.....HMA, 5E10, Top Course (mainline & inside shoulder)
2”.....HMA, 4E10, Leveling Course (mainline & inside shoulder)
3”..... HMA, 3E10, Base Course (mainline & inside shoulder)
1.5”..... HMA, 4C (outside shoulder)
2”..... HMA, 3C (outside shoulder)
3”..... HMA, 2C (outside shoulder)
9”.....Rubblized Concrete (mainline)
Existing aggregate base and sand subbase
PDS Underdrain System
6.5”.....Total Section Thickness

Present Value Initial Construction Costs ..... $345,182/directional mile
Present Value Initial User Costs ..... $33,418/directional mile
Present Value Maintenance Costs..... $114,709/directional mile
Equivalent Uniform Annual Cost ..... $33,158/directional mile

4. **Reduction in the Number of Work Zone Signs for Short Term Maintenance/Utility/ Permitted/Survey Operations – G. Mayes**

In the past several years, the enactment of legislation has nearly doubled the number of signs required to setup a work zone. The additional signs significantly increases the amount of time required to set up the work zones, exposing workers to traffic for a longer period of time. This requirement applies to all work zones; including short term (an operation occupying a location for more than one hour in a single daylight period) single day operations such as maintenance, utilities, permitted and survey operations. Reducing the

number of signs for these work zones will reduce worker exposure to traffic during setup and tear down of the signing sequence. It will also allow for more efficient use of time to perform the work.

Public Acts 103 (Andy's Law), 314, and 315 create penalties for injuring or killing a worker in work zones. Public Act 314, which refers to both fines doubled and injure/kill signing states in part, "Whenever practical, signs . . . shall be appropriately placed at the work zone . . . for the protection and safety of construction workers." For short term, single day operations, as noted above, it is not practical to place the additional signing.

It is recommended MDOT eliminate the following signs from short term operations for maintenance and utility work activities:

- R5-18b, Injure/Kill A Worker $7500 + 15 Years
- R5-18a, To Protect Highway Workers Fines Doubled in Work Zones or R5-18, Traffic Fines Doubled in Work Zones
- R5-18c, Work Zone Begins
- G20-2, End Road Work

MDOT must continue to define work zones using either Begin/End Work Convey signs, or single vehicle operations operating a strobe or beacon with the workers within 150 feet of the vehicle, as described in the Michigan Vehicle Code, Section 257.79.(d), (b) or (c).

ACTION: The recommendation is approved. The Maintenance (Gary Mayes) and Construction and Technology (Brian Zimmerman) Support Areas will develop the typicals for distribution.

The Maintenance Support Area will develop similar guidelines for mobile operations to submit to the EOC for approval.

5. **Changes to the Maintenance Work Zone Traffic Control Guidelines – G. Mayes**

Bureau of Highway Instructional Memorandum (BOH IM) 2005-16, *Guidelines to Establish Speed Limits in Work Zones*, provides motorists with realistic speed limits in work zones. The guidelines apply to all work zones, including short term operations (an operation occupying a location for more than one hour in a single daylight period) such as maintenance, utilities, permitted and survey operations. These operations are typically performed in isolated areas and are usually on accelerated schedules with workers always present; therefore, signing these work zones with a "45 mph where workers present" sign may not be appropriate. Signing the work zones with a standard "45 mph" sign will give the motorists clear direction of what is expected.

It is recommended that standard 45 mph signs be approved for use in short term, short length operations.

ACTION: The recommendation is not approved. All maintenance and utility work operations are required to follow BOH IM 2005-16, *Guidelines to Establish Speed Limits in Work Zones*, to provide consistent signing in all work zones for the motoring public. The Maintenance (Gary Mayes) and Construction and Technology (Brian Zimmerman) Support Areas will develop typicals for use in these operations.

(Signed Copy on File at C&T)
Brenda J. O'Brien, Secretary
Engineering Operations Committee

BJO:kar

cc:

K. Steudle	S. Mortel	J. Steele (FHWA)
J. Shinn	D. Jackson	R. Brenke (ACEC)
L. Hank	W. Tansil	G. Bukoski (MITA)
EOC Members	D. Wresinski	D. DeGraaf (MCPA)
Region Engineers	C. Libiran	D. Hollingsworth (MCA)
TSC Managers	R. J. Lippert, Jr.	J. Becsey (APAM)
Assoc. Region Engineers	T. L. Nelson	M. Newman (MAA)
T. Kratofil	T. Phillips	J. Murner (MRPA)
M. DeLong	K. Peters	G. Naeyaert (ATSSA)
B. Shreck	J. Ingle	C&T Staff